

IN THE CLAIMS

1. (Withdrawn) A broach assembly, comprising:
a plurality of broaching cutting inserts having a cutting surface;
a main body member having a plurality of spaced compression mounts formed thereon and aligned in a row, each of said plurality of compression mounts having one of said plurality of cutting inserts positioned therein in an interference fit.
2. (Withdrawn) The broach assembly of claim 1, wherein each of said compression mounts is defined between adjacent spaced support members aligned in a row and defines a first portion of said main body member, wherein each of said plurality of cutting inserts is disposed in said interference fit between said adjacent spaced support members, and wherein one of said adjacent support members extends along and braces said cutting insert.
3. (Withdrawn) The broach assembly of claim 2, wherein said spaced support members are integrally formed with said main body member.
4. (Withdrawn) The broach assembly of claim 3, wherein said main body member has a plurality of spaced reliefs formed therein, each of said spaced reliefs is formed proximate one of said plurality of support members and opens into one of said plurality of compression mounts, and wherein each of said reliefs facilitates the movement of one of said adjacent spaced support members from a closed position to an

open position and allows one of said plurality of cutting inserts to be moved relative to said main body member.

5. (Withdrawn) The broach assembly of claim 4, which further includes a plurality of actuation holes formed in said main body member, wherein each of said compression mounts has one of said plurality of actuation holes associated therewith and connected to one of said plurality of spaced reliefs, and wherein each of said actuation holes is adapted to receive a tool that is operable to move a second portion of said main body member relative to the rest of said main body member and displace one of said adjacent support members.

6. (Withdrawn) The broach assembly of claim 2, wherein said interference fit is within a range of about 0.0001 inches to about 0.002 inches.

7. (Withdrawn) The broach assembly of claim 1, wherein said main body member is elongated in a longitudinal direction and wherein said row of compression mounts is aligned substantially parallel with said longitudinal direction.

8. (Withdrawn) The broach assembly of claim 7, which further includes a mounting system for securely attaching said main body member to a support member.

9. (Withdrawn) The broach assembly of claim 2, which further includes mounting means for coupling the broach assembly to a broaching machine, and wherein said broaching machine is defined by a milling machine.

10. (Presently Amended) A broach assembly, comprising:
a carrier body having a plurality of integral support members aligned in a row and spaced along said carrier body;

a plurality of spacers aligned in said row and coupled to said carrier body, one of said plurality of spacers being located between an adjacent pair of said plurality of support members, said pair of said plurality of support members defining a first support member and a second support member, and said one of said plurality of spacers abutting said first support member; ~~and~~

a cutting insert disposed between said second support member and said one of said plurality of spacers, said cutting insert being wedged between said one of said plurality of spacers and said second support member, and wherein said second support member braces a substantial length of said cutting insert during broaching; and

wherein said plurality of support members and said plurality of spacers and said cutting insert are aligned in said row which extends in the direction of travel for cutting.

11. (Cancelled)

12. (Original) The broach assembly of claim 11, wherein each of said plurality of spacers defines a wedge member.

13. (Presently Amended) ~~The broach assembly of claim 10, A broach assembly, comprising:~~
a carrier body having a plurality of integral support members aligned in a row and spaced along said carrier body, wherein said plurality of integral support members includes a plurality of pairs of adjacent integral support members, wherein each of said pair of support members including a first support member and a second support member;
a plurality of spacers aligned in said row and coupled to said carrier body, and
each of said plurality of pairs of support members has one of said plurality of spacers located therebetween and abutting ~~one of said~~ first support members of each of said pairs of support members; ; and
a plurality of cutting inserts, and which further includes wherein one of said plurality of cutting inserts is disposed between ~~the other of said~~ second support members of each of said pairs of support members and said one of said plurality of spacers, and further wherein each of said cutting inserts is wedged between said one of said plurality of spacers and ~~the other of said~~ second support members of each of said pairs of support members, and wherein each of said ~~other of said~~ second support members braces along a substantial length of said cutting insert.

14. (Original) The broach assembly of claim 10, wherein said cutting insert has a lateral support surface which contacts said support member and said lateral support surface has a contour which minimizes lateral movement of said cutting insert.

15. (Presently Amended) A broach assembly, comprising:
a carrier body having a plurality of integral support members aligned in a row and
spaced along said carrier body;
a plurality of spacers aligned in said row and coupled to said carrier body, one of
said plurality of spacers being located between an adjacent pair of said plurality of
support members, said pair of said plurality of support members defining a first support
member and a second support member, and said one of said plurality of spacers abutting
said first support member; and
a cutting insert disposed between said second support member and said one of
said plurality of spacers, said cutting insert being wedged between said one of said
plurality of spacers and said second support member, wherein said cutting insert has a
lateral support surface which contacts said support member and said lateral support
surface has a contour which minimizes lateral movement of said cutting insert, The
broach assembly of claim 14, wherein said contour of said lateral support surface
includes a v-shaped profile, and further wherein said second support member braces a
substantial length of said cutting insert during broaching.

16. (Presently Amended) A broach assembly, comprising:
a carrier body having a plurality of integral support members aligned in a row and
spaced along said carrier body;
a plurality of spacers aligned in said row and coupled to said carrier body, one of
said plurality of spacers being located between an adjacent pair of said plurality of
support members, said pair of said plurality of support members defining a first support

member and a second support member, and said one of said plurality of spacers abutting said first support member; and

a cutting insert disposed between said second support member and said one of said plurality of spacers, said cutting insert being wedged between said one of said plurality of spacers and said second support member, wherein said cutting insert has a lateral support surface which contacts said support member and said lateral support surface has a contour which minimizes lateral movement of said cutting insert. The broach assembly of claim 14, wherein said contour of said lateral support surface includes a serrated profile, and further wherein said second support member braces a substantial length of said cutting insert during broaching

17. (Original) The broach assembly of claim 10, wherein said carrier body has a first portion with said integral support members extending therefrom and a second portion with a cavity defined therein that is adapted to nest over a support member of a broaching machine.

18. (Original) The broaching assembly of claim 10, wherein said carrier body is elongated in a longitudinal direction, and wherein said plurality of integral support members and said plurality of spacers and said cutting insert are oriented substantially parallel with said longitudinal direction.

19. (Original) The broach assembly of claim 10, wherein said carrier body includes a first internal fluid flow passageway in fluid communication with a second fluid

flow passageway defined in said one of said plurality of spacers and adapted to deliver a fluid through said one of said plurality of spacers to the cutting insert during the broaching operation.

20. (Original) The broaching assembly of claim 19, wherein said second fluid flow passageway is defined by a hole extending through said one of said plurality of spacers.

21. (Original) The broach assembly of claim 10, wherein said cutting insert is disposed in an interference fit between said second support member and said one of said plurality of spacers.

22. (Original) The broach assembly of claim 21, wherein said cutting insert has a first end and a second end, and wherein each of said first ends and said second ends have a cutting edge formed thereon.

23. (Original) The broach assembly of claim 10, which further includes quick change tool means for coupling the broach assembly to a broaching machine, and wherein said carrier body is coupled to said quick change tool means and said broaching machine is defined by a milling machine.

24-31. (Canceled)

32. (Presently Amended) A broach, comprising:
a broach bar having a first portion including a plurality of integrally formed cutting teeth and a second receiver portion defining a section free of integrally formed cutting teeth; and
at least one broach assembly having a plurality of ~~removeable~~ removeable cutting inserts mechanically coupled thereto, said at least one broach assembly coupled to said broach bar in said second receiver portion.

33. (Original) The broach of claim 32, wherein said second receiver portion is positioned between a first portion of integrally formed cutting teeth and a second portion of integrally formed cutting teeth.

34. (Original) The broach of claim 32, wherein said second receiver portion has been formed on said broach bar by removing a quantity of integrally formed cutting teeth.

35. (Original) The broach of claim 32, wherein said at least one broach assembly is coupled to said broach bar by a plurality of fasteners.

36. (Original) The broach of claim 32, wherein said broach assembly includes a body member having a plurality of spaced compression mounts formed thereon and aligned in a row, each of said plurality of compression mounts has one of said plurality of cutting inserts positioned therein in an interference fit.

37. (Original) The broach of claim 32, wherein said broach assembly comprises:

a carrier body having a plurality of integral support members aligned in a row and spaced along said carrier body;

a plurality of spacers aligned in said row and coupled to said carrier body, one of said plurality of spacers is located between each adjacent pair of said plurality of support members, each of said adjacent pair of said plurality of support members defines a first support member and a second support member, and said one of said plurality of spacers abutting said first support member; and

one of said plurality of cutting inserts is disposed between each of said second support members and each of said one of said plurality of spacers, and each of said cutting inserts is wedged between said one of said plurality of spacers and second said support member, and wherein said second support member braces a substantial length of said cutting insert during broaching.

38-44. (Canceled)

45. (New) The broach assembly of claim 13, wherein each of said plurality of cutting inserts has a lateral support surface which contacts said second support member, said lateral support surface has a substantially non-planer contour for minimizing lateral movement of said cutting insert.

46. (New) The broach assembly of claim 45, wherein said lateral support surface includes a plurality of grooves.

47. (New) The broach assembly of claim 45, wherein said lateral support surface includes at least one of a serrated or ridged surface.

48. (New) The broach assembly of claim 45, wherein said carrier body is elongated in a longitudinal direction, and wherein said plurality of integral support members and said plurality of spacers and said plurality cutting inserts are aligned in a row and oriented substantially parallel with said longitudinal direction.

49. (New) The broach assembly of claim 48, wherein said carrier body includes a first internal fluid flow passageway in fluid communication with a second fluid flow passageway defined in said one of said plurality of spacers and adapted to deliver a fluid through said one of said plurality of spacers to the cutting insert during the broaching operation.

50. (New) The broach assembly of claim 13, wherein said carrier body has an attachment portion configured to be received within a quill of a milling machine.

51. (New) The broach assembly of claim 13, which further includes an attachment member coupled to one end of said carrier body, said attachment member is configured to be received within a quill of a milling machine.

52. (New) The broach assembly of claim 15, wherein said carrier body is elongated in a longitudinal direction, and wherein said plurality of integral support members and said plurality of spacers and said cutting insert is aligned in a row and oriented substantially parallel with said longitudinal direction.

53. (New) The broach assembly of claim 52, wherein said carrier body includes a first internal fluid flow passageway in fluid communication with a second fluid flow passageway defined in said one of said plurality of spacers and adapted to deliver a fluid through said one of said plurality of spacers to the cutting insert during the broaching operation.

54. (New) The broach assembly of claim 15, wherein said carrier body has an attachment portion configured to be received within a quill of a milling machine.

55. (New) The broach assembly of claim 15, which further includes an attachment member coupled to one end of said carrier body, said attachment member is configured to be received within a quill of a milling machine.

56. (New) The broach assembly of claim 16, wherein said carrier body is elongated in a longitudinal direction, and wherein said plurality of integral support members and said plurality of spacers and said cutting insert is aligned in a row and oriented substantially parallel with said longitudinal direction.

57. (New) The broach assembly of claim 56, wherein said carrier body includes a first internal fluid flow passageway in fluid communication with a second fluid flow passageway defined in said one of said plurality of spacers and adapted to deliver a fluid through said one of said plurality of spacers to the cutting insert during the broaching operation.

58. (New) The broach assembly of claim 16, wherein said carrier body has an attachment portion configured to be received within a quill of a milling machine.

59. (New) The broach assembly of claim 16, which further includes an attachment member coupled to one end of said carrier body, said attachment member is configured to be received within a quill of a milling machine.

60. (New) The broach assembly of claim 10, wherein said cutting insert includes a first end portion and a second end portion, and wherein said second support member braces along said cutting insert to one of said end portions.

61. (New) The broach assembly of claim 60, wherein said second support members includes anti-chipping mechanisms located proximate one of said end portions.

62. (New) The broach assembly of claim 10, wherein said plurality of spacers, said plurality of support members and said cutting insert are in registry.